

How to Combat Against Upcoming Varients of Covid-19

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New variant of Covid 19 poses a threat to re-imagine and re-design our cities, which will result in to reduced transportation and a brighter sky. The key objective of the study intends to enlighten how the new variant of COVID-19 may effect cities and their residents socially, economically, psychologically and to suggest measures to combat the effects of a pandemic. Cities are growth engines, and policymakers can help them become more sustainable by creating jobs, reducing poverty, and assisting in the resilience of cities. This is especially relevant for developing countries, which, in comparison to developed ones, are rapidly urbanizing. The researcher carried out a detailed survey in the case study area (Lahore) to gather the facts regarding the impacts of COVID-19. The reliability analysis technique was used to analyze the results. The variables/factors were reliable at the value of 0.8, and 0.7. The analysis shows that residents faced problems in mobility, daily commute, and unavailability of hospitals and health care units. Residents were affected psychologically as well. The most significant impact of the lockdown which proved itself a blessing was the improvement in air quality and the environment of Lahore. The researcher concluded that the epidemic will have a significant impact on Pakistani city administration and governance. Future decisions will determine if post-COVID cities are more environmentally friendly to construct and manage. However, in addition to economic growth, it is vital to address the social and environmental aspects of long-term sustainability.

Keywords: Sustainable, development, resilient cities, Covid-19, pandemic, strategies

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Mahnoor Zamir is the researcher who conducted this work. Dr. Shakir Mahmood is the supervisor of this research who supervised and guided the researcher throughout this work.
Dr. Zamir Ahmad is the co-supervisor who helped the researcher in collecting and compiling the data.

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There exists no conflict of interest among the authors for publishing this manuscript in IJIST.

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Introduction

New variants of Covid-19 poses a threat to re-imagine and re-design our cities, which will result in reduced transportation and a brighter sky. Governments must work with city administrations and communities to design appropriate policies. Cities create new jobs, reduce poverty, and aid in achieving the Sustainable Development Goals, is rapidly urbanizing compared to developed countries[1]. [2]. It is observed that well managed cities played in an efficient way against previous pandemics e.g., Ebola, SARS and Plague. The current global problem, which began with the COVID-19 outbreak, is still ongoing and multi-faceted, affecting health, the economy, and society. The poorest city dwellers have borne the brunt of the consequences. The epidemic's economic impact has highlighted and exacerbated inequity and poverty fault lines. According to The World Bank assessments approx. hundred million people have been forced back into poverty, eliminating much of the progress made in recent years[3]. Cities in developing countries have been hit hardest, with an estimated one billion people living in dense, overcrowded informal settlements with limited access to basic amenities. Approximately 25-30 individuals per minute died before the current outbreak was relocated to other cities. The disease has caused a return to rural areas, resulting in economic downturns, job losses, and a shortage of job opportunities for migrants[4]. Technology workers are looking for greener pastures outside of cities as well. Because revenues have declined as a result of the crisis, and infrastructure services have already been lowered, and the city's futures are uncertain and constricted[5].

On the other hand, cities have frequently proved their strength and resilience, demonstrating that these can reconstruct the city more effectively and improve the lives of the people who live there. Covid-19 exists in Seoul, South Korea, and India[6] thanks to strict contact tracing, extensive testing, and mandatory isolation enabled by the city's existing pillars of transparency, accountability, and solidarity, which allowed the city to track infected people using mobile phone data, CCTV coverage, and credit card data[7]. The city demonstrated openness and transparency by sharing knowledge and effective initiatives.

The government as well as to institutions worked together to arrange stakeholder discussions across the city, which helped build trust and confidence by the involvement of stakeholders was essential for long-term development that is inclusive and transparent[8]. Community participation was emphasized as it is necessary for effective policymaking and equitable public service delivery. There are various examples of excellent governance and social commitment being used to make slow the development of the epidemic in both developed and developing economies [9].

Strong leadership, informed citizenry, feedback loops, strategic planning, openness, strong institutions, and an honest culture are all essential components of good governance. These are required for effective urban planning and management. Both vertically and horizontally, coordination is required at all levels of management. These allow local governments to design effective policies and action plans, inspire community confidence, and consult a wide range of stakeholders. Cities that have recovered from crises have demonstrated good governance, accepted the change, and responded with agility, ingenuity, and creativity. These improved service delivery, built community trust, and fostered community participation by creating social safety nets[10]. One of the most important aspects of a city's capacity to respond effectively is through good governance. Cities that invested in strong institutions and citizen education were better prepared to deal with unwanted situations.[11], [12].

Cities need to enhance the cooperation of businesses and social partners to reduce their fiscal deficits. Good governance is necessary to secure private investment and collaborate with the private sector. The purpose of this study was to find techniques to combat with new

COVID-19 variants[13]. The urban areas, or physical sectors, may be received by these strategies. The issues with transportation, education, medical and unemployment, have been badly affected need to be addressed in an efficient way to ensure that the cities have been least effected by running pandemic and it's upcoming varients [14][15].

Materials And Methods.

In this Research, the Primary data was collected to know the perception and willingness of people in the fight against COVID-19. We collected the primary data through surveys, questionnaires, and Interviews. The survey was conducted at various places and offices. The data collection was done on different days until the desired sample size was achieved.

Results:

General profile of Residents

The study has a qualitative explorative designwhere in-depth interviewsof individuals were conducted. Participants were invited to talk about their experiences of being the relative of a nursing home resident with COVID-19. The figured 4.1 shows the respondent's gender.

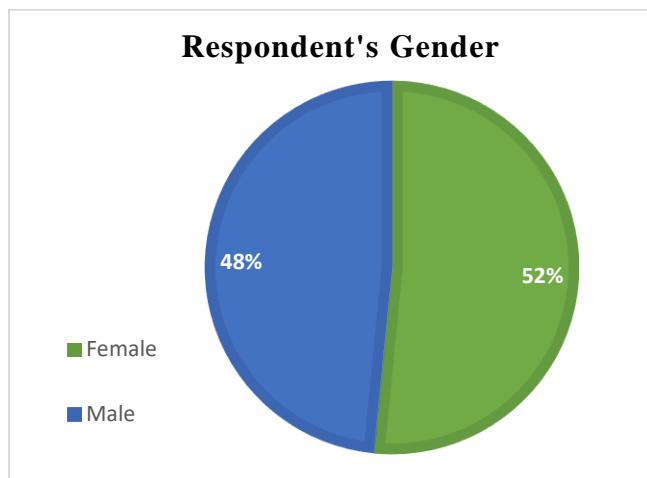


Figure 1: Respondent's Gender

Source: Developed by researcher

Interviews were conducted with the residents of Lahore and they were asked about the major impacts, sufferings, good and bad consequenceswhich they experienced in post covid-19. The restrictions have been challenging for the residentsand for their relatives, etc. Which gave rise to difficult choices and caused great suffering for many people. It has been especially difficult for residents with not being able to travel, commute, or lose their jobsTheFigure 2 shows the average number of earning members of the respondents.

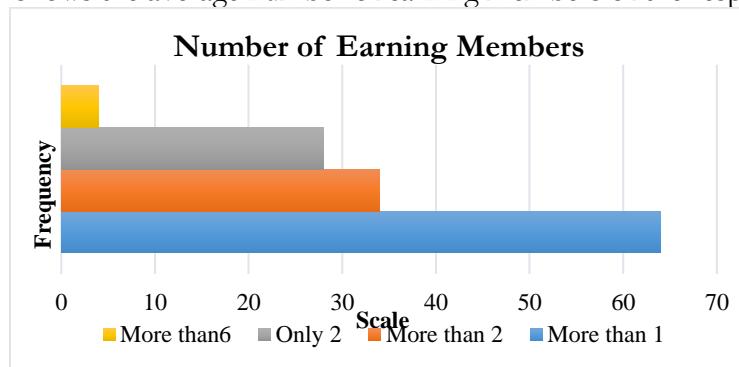


Figure 2: Earning members

Source: Developed by researcher

Respondents were asked to indicate how COVID-19 affected their life, and the results are reported in Figures 2, 3, and 4 respectively. It is found that 95% of the respondents indicated that their routine activities suffered due to the coronavirus pandemic in the region, whereas, 92% of the total respondents reveal that COVID-19 have restricted their social lives, and 87% of the respondents gave the view that they have reduced their traveling.

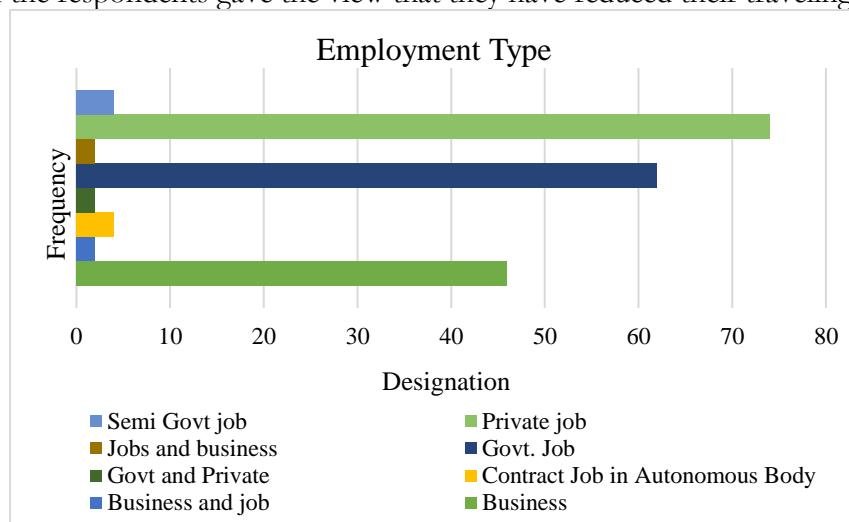


Figure 3: Employment Type

Source: Developed by researcher

The participants were encouraged to share their job nature and salary so that researcher may get an idea of the average income generated and how COVID-19 has affected it. The social and economic effects of COVID-19 are being felt with greater concern across least developed, developing, and emerging market economies irrespective of their income level. Countries like Pakistan experience a drop in the GDP and lost employment and income which leads to greater poverty, food insecurity, and malnutrition. Concurrently, capacities and resources vary across the world to overcome this pandemic and it intertwined health, social and economic impacts.

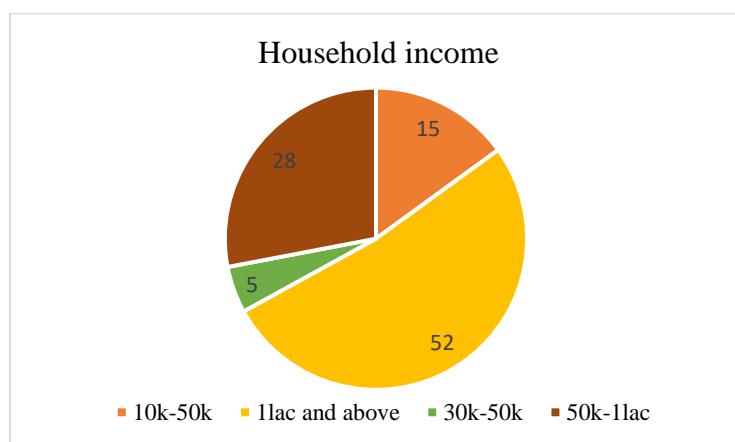


Figure 4: Household income

Source: Developed by researcher

Socio-Economic Impacts of Covid-19 on Residents

It was revealed from the surveys that the Covid-19 has not only impacted the food supply and health of people but also have badly affected the jobs and employment of people in major cities. It has widened social inequalities, and dramatically increased waste generation.

The researcher used the reliability analysis which refers to the consistency of a measure. Factors/variables were observed and then a test was conducted to examine the

consistency. Ideally, researchers want a test to have high reliability because that means it provides consistent measurements over time which means the results of the test can be trusted. Table .1: Reliability Statistics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.755	.759	7

Source: Prepared by Researcher

Table 4.2: Item-Total Statistics socio-economic variables

Item-Total Statistics					
Variables (Socio-economic)	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Job insecurity/ Unemployment	17.62	36.542	.634	.537	.689
Declining Business	17.31	33.769	.786	.760	.651
Shutdown of Shops, retail markets	17.31	35.106	.674	.606	.678
Poverty	17.39	42.446	.378	.382	.744
High Inflation rate	17.22	40.333	.501	.464	.721
Food security	17.49	46.403	.107	.179	.799
Extra expenses	17.65	40.447	.320	.399	.764

Source: Prepared by Researcher

The analysis shows that COVID-19 disturbed socio-economic lives. The lack of awareness among communities, in the wake of an unfamiliar crisis, further exacerbated the situation.

The most alarming situation indicated was that 78% of the respondents reported that the COVID-19 pandemic increased households' food shortages which is a serious situation that needs the great attention of the policymakers to manage this situation in a better way. The figure 5 shows the economic impact of COVID-19, and it is found that 78% of the respondents reported that they may face financial uncertainty in the future, and 64% confirmed that their earnings/income has decreased due to the COVID-19 pandemic. Six percent of the respondents had already lost their jobs, and 25% fear that they may lose their job.

Psycholocial Issues During Pandemic

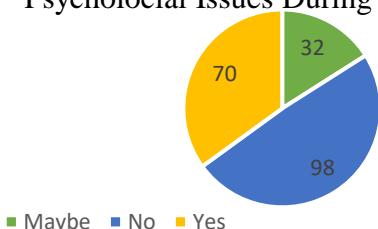


Figure 5: Psychological issues during a pandemic

Source: Developed by researcher

The psychological effects of stay-at-home policies and physical distancing will be strong, especially in those cultures where gatherings and open-air activities are at the core of social life. Everything considered normal until a few months ago could dramatically change, not only because of the new rules and restrictions but also because of people's fear to physically interacting with others.

Covid-19 and health care system

The Pakistan healthcare system was caught off guard by the COVID-19 disaster. Undoubtedly, the events of the last five months will be scrutinized more in the future. The main goal of this research, however, is to look ahead. The analysis depicts some potential future concerns if the crisis is not addressed swiftly, as well as some reasons for optimism and possibilities to implement recent lessons gained. For example, the crisis may spur innovation in medication discovery and vaccine development. It has already compelled the quick adoption of telemedicine at all levels of the healthcare system in the clinical arena. If effectively implemented, the latter can result in significant time savings for both patients and clinicians. It will be critical to keep this spirit of innovation alive throughout Pakistan's healthcare system. In the case of Lahore, Statistics are as follows

Since COVID-19 is transmitted locally in Cities of Pakistan, respondents were asked to indicate the factors that caused this local transmission. The results show that majority of the respondents (74.4%) blame the people of the region that they did not cooperate with government and implementation agencies to take necessary mitigation measures and follow lockdown. Lack of awareness about COVID-19 severity, lack of testing kits in hospitals, and government inability to manage it at the initial level are other major reasons for the local transmission of COVID-19.

Availability of healthcare units

The public health system of Pakistan is already under stress with a ratio of one doctor to 963 people and one hospital bed to 1,608 people. The country is facing an acute shortage of more than 200,000 doctors and 1.4 million nurses. The absence of Universal Health Coverage (UHC) further exacerbates the vulnerability of the country's population to the health, economic and social fallouts of this pandemic

The formation of COVID-19 can serve as a prime example of how all organizations, including hospitals and healthcare systems, function in the context of their external environment. Uncertainty is a continual factor in the formation of strategy by health systems, even in normal times; examples include uncertainties owing to unpredictably slow or delayed progress in research and drug development, regulatory changes, and digital disruptions. The amount of this uncertainty has grown in tandem with the rapid rate of change in the healthcare business and society. Under normal uncertainty, planners strive to identify activities that are likely to succeed in a wide range of possible futures and to execute those actions with a high degree of agility. In other words, businesses must find solutions that may be halted or expedited when the business environment changes. They must also construct a succession of no-regrets moves that are likely to be effective regardless of market conditions. Regulatory efforts at the state and federal levels drove the first wave of changes in clinical activity as the pandemic spread.

Table 4.3: Reliability Statistics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
.918	.919		4

Source: Prepared by Researcher

Table 4: Item-Total Statistics

Item-Total Statistics

Scale Item Deleted	Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted

Facilities in hospitals	8.71	13.690	.740	.600	.920
Hospitals accessibility	8.66	13.685	.880	.802	.871
Doctors/staff Cooperative	8.49	13.013	.901	.832	.862
Availability of vaccine	8.59	14.741	.739	.619	.917

Source: Prepared by Researcher

According to statistics, the factors which affected the people most are facilities in hospitals, accessibility to health care units, availability of staff and doctors and their behavior, and availability of vaccines.

Institutions and their leaders should learn from their triumphs and failures in dealing with the COVID-19 issue, both medically and economically. A stable and long-term path to financial recovery will include striking a delicate balance between increasing income and lowering expenses. The main source of revenue for hospitals is money from clinical operations, while the largest source of expenses is employee remuneration. Faced with a drop in revenue from elective procedures, surgeries, and therapies, almost every organization has implemented cost-cutting measures, including, in some cases, painful salary and benefit cuts, as well as (possibly affecting the medical equipment industry) virtually systemic freezes on capital expenditures.

However, while cost-cutting efforts may be important in the short term to resolve immediate financial imbalances, corporations cannot save their way out of a crisis. As a result, the primary focus must be on recouping money from therapeutic services, which, in the first place, necessitates regaining patient trust. It's just as crucial to keep present patients and grow the future patient pool (for example, by increasing geographic reach and offering new services and treatments) as it is to keep the talent that can provide these services. Institutions may also conduct a thorough analysis of their supply chains, revenue cycle efficiency, and potential physical footprint reductions to save real estate costs. **Interpretation/future strategies**

From a global point of view, cities share common challenges and problems. Although the way of responding to these challenges and how cities bring solutions to various problems does not have to be the same, the impact of the decisions made by each of them transcends beyond their municipal terms. Some issues, especially those related to mobility, waste management, or the provision of basic services such as water and energy, are common among all urban concentrations and require a global strategic vision for better use of public resources. In addition, a global strategic vision could help to achieve scale advantages, which are crucial to be more sustainable when deploying the same public services in different municipalities of the same geography. From the point of view of the local administrations, Covid-19 has put onto the table the need to carry out a coordinated strategy able to respond to the current health emergency and the forthcoming social and economic crisis.

Impact on Environment

The suspension of economic activities and the sharp reduction in movement associated with the confinement of covid-19 has had a noticeable environmental impact on cities. Significant advances in urban environmental quality include reduced greenhouse gas emissions, improved air quality, and the beginnings of urban renaturation.

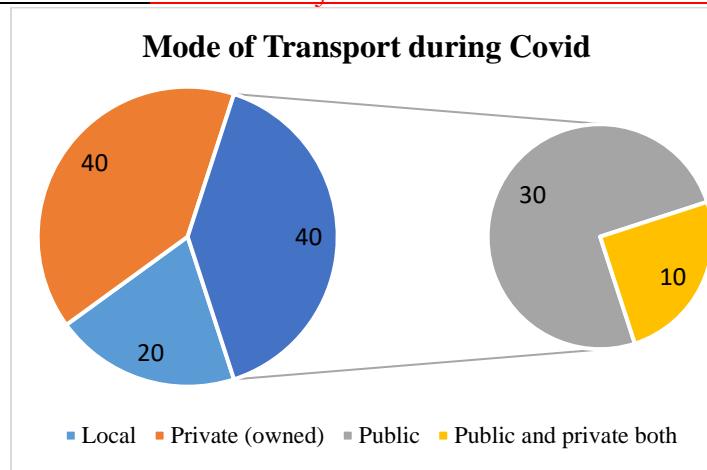


Fig 6: Mode of Transport during a pandemic

Source: Developed by researcher

Due to restrictions and lockdown, most of the people shifted towards private transport. (Figure 4.5). It has been observed that (in terms of low-carbon cities) a reduction of up to 70% in CO₂ emissions in fully refurbished buildings, as well as a reduction of over 11 tons per year through urban sustainable mobility measures.

Future strategies

As normal operations resume, it is advised to policymakers and city designers to discuss and focus on the proponents of climate change mitigation and proponents of quick socioeconomic recovery as they are mutually exclusive.

However, combating climate change is no longer an option; it has become an essential need. As a result, the cities have to face the dual challenge of overcoming a socioeconomic crisis while also maintaining the environmental quality gained during confinement.

It has been observed that air pollution has a higher influence on public health and the virus's impact (in addition to annual deaths from pollution). The reduction in pollution in all cities owing to mobility limitations imposed during the lockdown exemplifies the environmental benefits of drastically reducing the number of cars on public highways.

Nonetheless, the use of nonrenewable energy sources in buildings is responsible for the majority of urban emissions. As a result, infrastructure is at the heart of zero-carbon cities, as it has the potential to reduce emissions considerably through material design efficiency and sustainability in new construction, as well as through proper retrofitting of existing structures. Future-proof cities will be distinguished from non-resilient cities by improved planning of new buildings and adaption of existing ones.

Impact on Mode of transport and Travel Pattern

Because of the high flows and contacts, dense cities are more vulnerable to the propagation of virus. However, cities with higher densities are more efficient in terms of providing services and finding solutions. Statistics show that variables are consistent which means that these are reliable and responsible for changed mobility patterns.

Mobility pattern

The discourse is contradictory when faced with the necessity to preserve social isolation. On the one hand, some governments encourage people to drive their cars (with its consequences of pollution and congestion). Milan, Paris, Bogotá, and Barcelona, on the other hand, are supporting sustainable mobility by rethinking urban space usage in favor of active transportation modes (cycling, walking), and enhancing public transportation to provide additional options

Table 5: Reliability Statistics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.561	.560	4

Source: Prepared by researcher

Table .6: Total Item Variables statistics

Item-Total Statistics					
Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Daily trips affected by Covid-19	8.79	11.443	.281	.269	.539
Ban of public transport	8.85	9.397	.470	.597	.378
Unavailability of private transport	8.74	10.467	.376	.592	.464
Traffic Congestion was decreased	8.77	11.215	.262	.250	.557

Source: Prepared by researcher

This demonstrates the relevance of institutional communications, as well as the ability for tactical urban planning measures implemented during a health crisis to be implemented strategically to become structural measures for more sustainable mobility.

The future that cities face is complex, and this complexity necessitates a macro-scale strategy for the impending climate problem, as well as a framework like the Sustainable Development Goals that may provide direction on where we're going and how to develop our cities accordingly.

Mobility, urbanization, interconnection, global supply networks, and environmental damage were all factors that made this pandemic conceivable in the first place. Mobility constraints have emphasized the fragility of global supply chains in this environment. Furthermore, cities are confronted with many problems that necessitate quick societal mobilization, the necessity to relocate the economy, and the upgrading of local and industrial infrastructure.

At a time when the world requires global cooperation and knowledge sharing to combat the present epidemic, towns and municipalities are experiencing a revival of local engagement to become more resilient. Using Covid-19 recovery initiatives to promote the climate agenda at the same time gives a strategic opportunity: transitioning to more sustainable post-pandemic communities through smart design and the promotion of a circular and regenerative economy.

Interpretation/lesson learned

The current crisis has also molded our attention toward the preparation of city resilience plans, risk assessment charts, and indicators. Resilience assessments must go from single-hazard analyses to multi-hazard assessments, and this can only be accomplished by integrated and coordinated efforts across all city sectors and departments.

In addition, urban planning must shift from a reactive to a proactive approach to emergency preparedness and decision-making, preparing cities for an uncertain and unimaginable future. Understanding the interconnections between systems will be important to tackling the complexity required for proper urban design, and better data platforms capable of providing genuine insights and capturing critical data will become central to the resilience discourse.

Impact on Tourism and Recreation

Covid-19 also impacted tourism and recreation activities. According to the results, leisure activities, outdoor dining, shopping, outdoor games, and trips were affected was observed.

The successful economic reactivation relies upon improvement in the mobility efficiency at a metropolitan level, while it seems clear that the change in consumption habits prompted by Covid-19 is going to create a new way of mobility – which will take into account the transport of products from factories and warehouses directly to households.

In terms of mobility, metropolitan areas will require a leading role. Therefore, it will be necessary to develop global and inclusive mobility strategies connected to this new metropolitan scenario. To achieve that goal, local and metropolitan authorities have to push hard on regulatory homogenization and enable new business models in mobility, to maximize their capacity. The incorporation and promotion of systemic solutions in the post-Covid-19 metropolitan mobility schemes ,such as a shared distribution system for companies to reduce costs, now that online demand has grown significantly

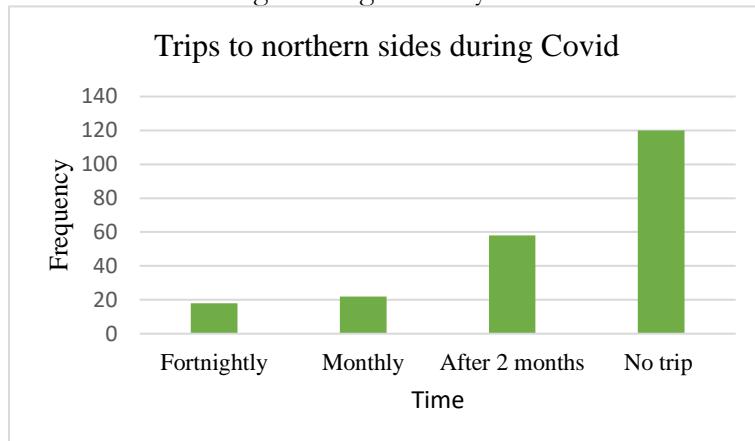


Figure 7: Trips to northern sides during COVID

Source: Developed by researcher

The COVID-19 mitigation measures including social distancing and travel restrictions have affected the travel and tourism sector. Demands in the tourism, travel, hotel, and restaurant sectors collapsed drastically after the spread of the coronavirus, which consequently affected the travel and tourism industry severely. The tourism sector generates huge revenue and provides employment which has been extremely affected (ICIMOD, 2020). It is estimated that in the trekking sector alone, thousands of people have been severely affected while approximately 20,000 tour guides have lost their jobs (De Silva, 2020). The hospitality sector, which employed up to 60,000 workers in Northern areas has been severely impacted by a decline in tourism.

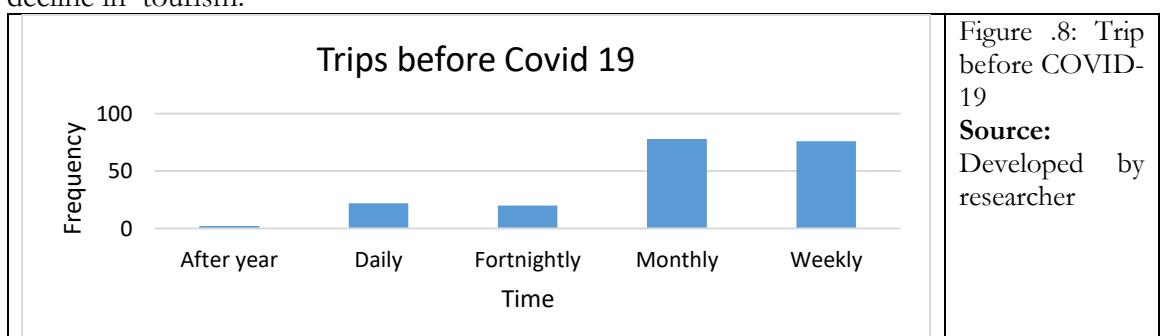


Figure .8: Trip before COVID-19

Source: Developed by researcher

Interpretation

COVID-19 (Coronavirus) has had an impact on daily life and is affecting the global economy. This pandemic has touched thousands of people, who are either sick or dying as a result of

the disease's spread. The most typical signs of this viral illness include fever, cold, cough, bone pain, and breathing difficulties, which can progress to pneumonia. Vaccines are not yet available for this new viral disease that is infecting humans for the first time. As a result, the emphasis is on adopting extreme precautions such as comprehensive hygiene regimen (e.g., regularly washing hands, avoiding face-to-face encounter, etc.), social separation, and mask wearing, among other things. This virus is rapidly spreading across the country. Countries are prohibiting mass gatherings of people in order to spread and break the exponential curve. 1 , 2 Many countries are isolating their citizens and enacting severe quarantines in order to stem the spread of this highly contagious sickness.

COVID-19 has had an immediate impact on our daily lives, enterprises, and global trade and mobility. Because the virus spreads so quickly from person to person, early detection of the sickness is critical for controlling its spread. The majority of countries have slowed their goods manufacturing. 3 , 4 The cause of this sickness has an impact on many companies and sectors, including pharmaceuticals, solar power, tourism, and the information and technology industries. This infection has far-reaching consequences for citizens' daily lives as well as the global economy.

COVID-19's current impact on daily life is vast and has far-reaching consequences. These are classified into several categories:

A) Healthcare

Difficulties in diagnosing, quarantining, and treating suspected or confirmed instances
The existing medical system places a significant strain on its users.

Patients with various diseases and health issues are being overlooked.

Overburdening doctors and other healthcare professionals, who are particularly vulnerable.

Overcrowding at medical stores

High-level protection is required.

Medical supply chain disruption

B) Economic

Manufacturing of critical items is slowing.

Disrupt the product supply chain.

National and international business losses

Market cash flow is poor.

Revenue growth has slowed significantly.

C) Social

The service industry is unable to deliver adequate service.

Cancellation or delay of major sporting events and tournaments

Avoiding domestic and international travel, as well as service cancellations

Disruption of cultural, religious, and celebratory celebrations

Unnecessary stress in the population

Social isolation from our friends and family members

Closure of hotels, restaurants, and religious buildings

Closure of entertainment venues such as cinema and play theatres, sports clubs, gyms, and swimming pools, among others.

Exams have been postponed.

This COVID-19 has impacted supply sources and the global economy. Traveling from one country to another is subject to restrictions. When tested while travelling, a large majority of cases are found to be positive, especially when travelling internationally. 5 All governments, health organisations, and other authorities are working hard to identify cases afflicted by COVID-19. In these days, healthcare professionals encounter numerous challenges in sustaining healthcare quality.

Table 7: Reliability Statistics

Reliability Statistics		Cronbach's Alpha Based on Standardized Items	N of Items
Cronbach's Alpha			
.923		.923	11

Source: Prepared by researcher

Table 4.8: Total-item statistics variables

Item-Total Statistics					
Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Wearing a mask can lessen the effects of Covid-19	25.71	106.792	.834	.833	.909
Avoiding social gatherings	25.86	110.400	.780	.780	.912
Using hand sanitizer can lessen the effects of Covid-19	25.55	107.944	.822	.788	.909
Maintaining Social distance	25.83	108.314	.847	.827	.908
Timely Vaccination	25.51	110.730	.716	.684	.915
Covid-19 is real/not real	25.85	112.169	.669	.611	.917
Media has created hype	25.44	120.031	.379	.388	.931
Measures taken by the Government	25.65	118.381	.550	.754	.922
More awareness campaigns are required	25.86	112.556	.690	.794	.916
Public Health Authorities' negligence	25.62	118.368	.582	.733	.921

Source: Prepared by researcher

RECOMMENDATIONS.

From the results obtained and data analysis, it is recommended that improvement in all the sectors, mentioned above is required, particularly in the health sector. Mode of transport and living should also be modified accordingly as per Covid 19 requirements. For a healthy environment,

Maximum plantation should be done in near future, people should make mask-wearing, and use sanitizers as a habit along with social distancing.

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QUESTIONNAIRE

Questionnaire Sr. No: _____

Date: _____

The purpose of this study is to provide Future Strategies to Combat with Covid 19 in Pakistan.

Personal Information:

1. Name: _____
2. Age of Respondent: _____
3. Gender: Male Female
4. No of family members: _____

Household Income

5. Monthly income
 - a) 10k-50k
 - b) 50k-1lac
 - c) 1lac and above
6. No of earning members in the house
 - a) 1
 - b) 2
 - c) Above

7. Source of income
 - a) Private job
 - b) Govt. Job
 - c) Business
 - d) Other

Question 8,9 and 10 is in case of the respondent is a **private job holder**

8. Did you receive any threats regarding termination because of covid-19?
 - a) Yes
 - b) No
9. Did your company reduce the no of employees?
 - a) Yes
 - b) No
10. Did you receive the same salary as before covid-19?
 - a) Yes
 - b) No

Question 11,12 and 13 is in case the respondent is having their **own business**

11. Did your business affect due to covid-19?
 - a) Yes
 - b) No
12. Did your monthly income affect by covid-19?
 - a) Yes
 - b) No
13. If yes, then how you are dealing with it?

14. Are you satisfied with the government policies?
 - a) Yes
 - b) No

Health:

15. Are you vaccinated against viral diseases?
 - a) Yes
 - b) No
16. Do you diagnose with any health issues?

Sr No	Disease	Yes	No
1.	Asthma		
2.	Diabetes		
3.	Hypertension		
4.	Heart Disease		
5.	Liver disease		
6.	Kidney disease		
7.	Cancer (Any type)		

17. Do you test positive for Covid-19?
 - a) Yes
 - b) No
18. Did any of your family members or relative diagnosed with covid-19?
 - a) Yes
 - b) No
19. If yes, what measures you have taken?

20. Are hospitals in your area accessible?

a) Yes
b) No

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
21.	Are you satisfied with the facilities provided in your nearby hospital?					
22.	Professionals in the hospitals are cooperative?					
23.	Do you trust the treatment provided by the Doctors?					
24.	Do you think they are taking appropriate measures to overcome this disease?					

20. Do your mental health is also affected by covid-19?

a) Yes
b) No

21. Do you face any mental health-related problems amidst this pandemic?

a) Yes
b) No

22. If yes, how did you deal with it?

Travel Pattern

23. How many daily trips do you make on average before covid-19?

a) 1-3
b) 3-6
c) Above

24. How many daily trips do you make on average after covid-19?

a) 1-3
b) 3-6
c) Above

25. What mode of transport do you use before Covid-19?

a) Public
b) Private

26. What mode of transport do you use after Covid-19?

a) Public
b) Private

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
27.	Are your daily trips affected by covid-19?					
28.	Do you think public transport is safe after covid-19?					
29.	Are you satisfied with the measures taken by public transport					
30.	Do you prefer public transport over private transport?					
31.	Sop's are being followed in public transport?					

32.	Traffic Congestion increased after covid-19.					
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Leisure and tourism:

How often do you go for an outing before Covid-19?

- a) Daily
- b) Weekly
- c) Fortnightly
- d) Monthly

33. How often do you go for an outing after covid-19?

- a) Daily
- b) Weekly
- c) Fortnightly
- d) Monthly

34. Where do you prefer in going for leisure activities?

- a) Restaurants
- b) Parks
- c) Cinema
- d) Shopping Malls

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Are your leisure activities being affected by Covid-19?					
2.	Do you prefer outdoor dining					
3.	Do you visit shopping malls similarly to before Covid-19?					
4.	Do you feel safe while going in public spaces?					
5.	Do you enjoy take away method as indoor dining is not allowed after covid-19?					
6.	Do you think necessary measures are being taken in public spaces to avoid the risk?					
7.	Are you satisfied with these measures?					

35. Did you cancel any inter or intra-country tours because of COVID-19?

- a) Yes
- b) No

36. Did you plan any inter or intra-country tours after Covid-19?

- a) Yes
- b) No

For Inter Country Tour

37. Do you find it's difficult in getting a tourist visa?

- a) Yes
- b) No

38. Do you face any problems in finding a flight for the respective country?

- a) Yes
- b) No

39. Do you have to pay extra for tickets because of Covid-19?

- a) Yes
- b) No

40. Do you experience quarantine after reaching the respective country?

- a) Yes

b) No

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
41.	Do you think you could have enjoyed it more without following SOP's?					
42.	Do you like your experience in another country during Covid-19?					
43.	Are you satisfied with the measures taken at the airport?					
44.	Do you think these measures are necessary?					

45. Do you think SOPs are strict in other countries?

- a) Yes
- b) No

For Intra Country Tour

46. Did you plan any Intra country tours after Covid-19?

- a) Yes
- b) No

47. If yes, then where?

- a) Northern Areas
- b) Other Cities

48. What mode of transport did you use?

- a) Public
- b) Private

49. If public, did you have to face any difficulty in booking?

- a) Yes
- b) No

50. Did you have to pay extra because of COVID-19?

- a) Yes
- b) No

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
51.	Do you think you could have enjoyed it more without following SOP's?					
52.	Are you satisfied with the measures taken at tourist sites?					
53.	Do you think these measures are necessary?					

Covid-19 Awareness and willingness

54. Are you aware of the sop's issued by the government?

- a) Yes
- b) No

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Do you think wearing a mask can and using hand sanitizer can prevent Covid-19?					
2.	Do you avoid social gatherings after Covid-19?					

3.	Does your think isolating people with covid-19 can help in reduce the risk?					
4.	Do you think maintaining six feet distance can help?					

55. Are you vaccinated?

- a) Yes
- b) No

56. If not, then why?

Sr No	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
57.	Do you think Covid-19 is real?					
58.	Do you think that the media has created hype about it?					
59.	Are you satisfied with the measures taken by the Government?					
60.	Do you think more awareness campaigns are required to deal with it?					
61.	Do you think this measure can help in reducing the no of cases?					

62. Do you think Public Health Authorities in Pakistan doing enough to prevent the COVID-19 outbreak?

- a) Yes
- b) No

63. Any suggestions to improve COVID-19 awareness or suggestions to cope with COVID-19?



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